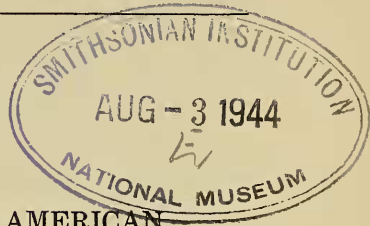


PROCEEDINGS
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SOME NOTES UPON WEST AMERICAN
TURRID MOLLUSKS

BY PAUL BARTSCH*

In the preparation of a monograph on the East Pacific turrid fauna, which embraces the largest gastropod family on the coast, I have received the finest cooperation of mollusk students on the west coast that one could desire. In many instances anatomic material has been furnished, which greatly aids in the unraveling of the much confused, inadequate classification used today.

A recent sending from Mrs. H. R. Turver of Santa Cruz, California, contains a number of things which require nomenclatorial consideration, and the description of some new species, which are furnished herewith.

Among this sending is a specimen of *Lophiotoma (Polystira) nobilis* (Hinds) (= *Pleurotoma nobilis* Hinds). This species was based on a specimen dredged by H.M.S. *Sulphur* in "7 fms. among mud at San Blas Mexico," and described by Hinds in the Proceedings of the Zoological Society of London, 1843, on page 37. The species was practically lost until H. N. Lowe in January, 1930, dredged a specimen in 20 fms. off Guaymas, Mexico. This specimen is now Nat. Hist. Mus., Balboa Park, San Diego No. 22658.

Mrs. Turver's sending therefore represents the third individual known to me. It bears the U.S.N.M. No. 518403. She writes that another specimen is in the Turver collection. Therefore, four individuals of this magnificent species are known to science.

Mrs. Turver's sending contains 3 additional species that require naming. These I am christening below: Figures and detailed station records will be published in the monograph.

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IMACLAVA, new genus.

Shell rather large, elongate-turritid, white or banded or spotted with chestnut brown. Nuclear whorls about 2, well rounded, smooth. The postnuclear whorls are appressed at the summit and slope gently to the concave sinal area. This part of the shell extends over almost half of the turns. Anterior to the sinal area, the whorls bear axial ribs which may be mere nodules or they may be elongated to extend over the base. In addition to this the sinal area is marked by fine spiral striations, while the ribbed portion of the shell is marked by strong, quite regularly spaced, spiral striations between which much finer spiral threads are present. Base moderately long, well rounded, and marked by the weak continuation of the axial ribs and by spiral sculpture corresponding to that of the spire. The columella is rather stout and marked by low, rounded spiral cords which are also marked by fine spiral hair lines. It likewise bears a rather strong basal fasciole, anterior to which it is marked by lines of growth only. These extend over the entire surface of the shell. Aperture irregularly pear-shaped. Posterior sinus deep and large with its edge outward reflected. Anterior to the posterior sinus, the outer lip is protracted and bears a strong stromboid notch a little posterior to its anterior termination. There is a heavy varix at some distance behind the edge of the outer lip. The inner lip is reflected over and appressed to the columella. The parietal wall is covered by a thick callus which forms a heavy hump at the posterior angle. The operculum is oval with apical nucleus and marked on the outside by concentric lines of growth. The radula bears a very small rachidian tooth followed by a broadly lunate, strongly denticulated lateral and rather long, dagger-shaped marginals with the basal portion almost appearing double.

Type: *Imaclava ima*, new species.

This genus is known to extend from the Gulf of California to Panama.

This genus belongs to the subfamily Clavinae, the radula of whose members possesses a rachidian, lateral, and marginal teeth.

***Imaclava ima*, new.**

Shell large, elongate-turritid, of buff ground color usually banded or spotted with chestnut brown, with a brown varix. The nucleus consists of 2 small, well rounded, smooth turns. The postnuclear whorls are appressed at the summit. The sinal area practically extends from the summit to almost the middle of the turns and is marked by fine spiral striations as well as decidedly sinuous incremental lines. Anterior to the sinal area, the whorls are marked by knoblike axial ribs of which 9 are present on the last turn posterior to and including the varix. On the last whorl these become enfeebled and extend feebly over the base. The

anterior portion of the spire also bears rather broad, strongly incised, shallow spiral grooves which separate slightly rounded areas about twice as wide as the grooves, the entire surface being marked by fine spiral hair lines. The base is well rounded and marked by 4 spiral cords resembling those on the spire, which are also marked by fine hair lines. The columella is rather long, somewhat sinuous, and moderately stout, and bears a strong fasciole. Posterior to the fasciole it is marked by 4 spiral threads corresponding to those on the base. Aperture irregularly pear-shaped. The posterior sinus is deep and broad with the edge outward reflected. Posterior to the posterior sinus, the outer lip connects with the heavy lump on the parietal wall at the posterior angle of the aperture. Anterior to the sinus it is protracted into a clawlike element with the edge rendered slightly fluted by the external sculpture. The outer lip bears a strong stromboid notch at some little distance posterior to its anterior termination, and a heavy varix at some distance behind the edge of the outer lip. The anterior canal is moderately long and moderately broad and moderately reflected. The inner lip is reflected over and appressed to the columella. The parietal wall is covered by a rather heavy callus which forms a knob at the posterior angle of the aperture. The operculum is oval with apical nucleus and marked on the outside by concentric lines of growth. The radula bears a very small rachidian tooth followed by a broadly lunate, strongly denticulated lateral and rather long dagger-shaped marginals with the basal portion almost appearing double.

The type, U.S.N.M. No. 55239, comes from the Stearns Collection and was collected in San Lucas Cove, Lower California. It has 13.5 whorls and measures: Height, 47 mm.; greater diameter, 18 mm.; length of aperture, 18.2 mm.

We have 14 additional lots in the collection containing 17 specimens, the localities ranging from San Lucas Cove, Lower California, to Guaymas, Mexico.

Genus KNEFASTIA Dall.

This genus, typified by *Pleurotoma olivacea* Sowerby, belongs to the subfamily Clavatulinae, that is, its members possess a radula with a small rachidian tooth and Y-shaped marginals. Typical *Knefastia olivacea* (Sowerby) comes from Panama and differs from those of the Gulf of California in having lirations on the inside of the outer lip, which are wanting in the Gulf of California species. This may be known as:

Knefastia dalli, new species

1843. *Pleurotoma funiculata* Reeve, Conch. Iconica. pl. 11, fig. 95.
Not *Pleurotoma funiculata* Kiener, 1839, Icon. Coq. Viv.,
p. 24, pl. 16, fig. 1.

Shell very broadly fusiform, covered with an olivaceous epidermis which sometimes has a brownish tint. After the epidermis is removed, the shell is pinkish white, variously variegated, blotched, and streaked with brown. The nucleus consists of a single smooth turn. The postnuclear whorls are appressed at the summit with an impressed line a little below the summit, which gives the summit the impression of being bounded by a cord. The posterior half between the summit and the suture is concave and marked by strongly retractive lines of growth which are really the filling up of the sinus. The anterior half of the space is marked by strong nodulose axial ribs which are crossed by four spiral cords, of which three are equal, while the first posterior to the nodules is weakest. Of the nodules 8 occur on the early whorls and 12 on the penultimate. The round portion of the base posterior to the periphery is marked by 3 equally strong and equally spaced spiral cords, which, like those of the spire, pass undiminished over the ribs and intercostal spaces. The attenuated portion of the base is rather stout and marked by 12 spiral cords which become successively weaker and closer spaced anteriorly. Aperture narrowly pear-shaped; posterior angle acute. Outer lip thin at the edge, rendered sinuous by the spiral cords, with a decided sinus in the concave portion immediately anterior to the summit; columella covered on its inner border by a thin callus which completely covers the ribs; parietal wall also covered by a thin callus. The operculum is claw-shaped with pointed apical nucleus; it has a strong ridge on the right margin; the exterior is marked by concentric strong incremental threads. The attachment scar on its inner surface is deeply impressed. The radula has a small rachidian and Y-shaped marginal teeth.

The type, U.S.N.M. No. 59347, comes from the Gulf of California. It has 7.5 postnuclear whorls remaining and measures: Height, 6.1 mm.; greater diameter, 24.5 mm.; length of aperture, 30.7 mm.

We have 14 additional lots, embracing 26 specimens, all from the Gulf of California.

Genus ANTIPLANES Dall.

The species of this genus are in a delightful muddle. Under it have been lumped members belonging to entirely distinct groups. Mrs. Turver's sending contains 2 specimens brought up by fishermen on black cod lines from 1200 ft. depth at Monterey Bay, Santa Cruz, California. These belong to an unnamed species which I have christened *Antiplanes major*, new species.

Antiplanes major, new species.

Shell very large, elongate-turritid, covered by a reddish olivaceous thin periostracum. Interior of the aperture with a brownish flush which is intensified in a narrow band at the summit and another one at the insertion of the columella. In some specimens the entire aperture is brown. Nuclear whorls 2, small, smooth, forming a slightly expanded tip. The postnuclear whorls are slightly rounded, very narrowly shouldered at the summit and marked by rather strong incremental lines which are decidedly sigmoid and follow the outline of the posterior sinus. The channel and the region posterior to it are marked by inconspicuous, microscopic, spiral threads. In addition to this, fine oblique dendritic threads are present which radiate retractively from the median portion to the posterior sinus. Anterior to the posterior sinus the whorls are marked by strong spiral threads which vary in size and spacing. Base rather long, marked by incremental lines and spiral threads which are stronger than those on the anterior portion of the whorls. Columella rather long marked like the base. Aperture elongate tear-shaped with the anterior channel rather long and broad. The posterior sinus is deep and the outer lip is protracted anterior to it. The inner lip is sinuous and marked as a smooth resorption area.

The type, U.S.N.M. No. 224347, was dredged by the U. S. Bureau of Fisheries Steamer *Albatross* at Station 3172, off Bodega Head in 62 fms., lat. 38° 23' 35" N., long. 123° 14' W., on black sand bottom; bottom temperature 48° F. It has 9 whorls remaining and measures: Height, 54.6 mm.; greater diameter, 15 mm.; length of aperture, 22 mm.

In addition to this we have 38 lots, embracing 110 specimens the localities ranging from off Bodega Head to Point Loma Light House, with depths from 43 fms. to 278 fms.

This species can readily be distinguished from all other California *Antiplanes* by its huge size.